Operating Manual

OPTIMOD-HF®

Audio Processor

Model 9105A

orban®

IMPORTANT NOTE: Refer to the unit's rear panel for your Model #.

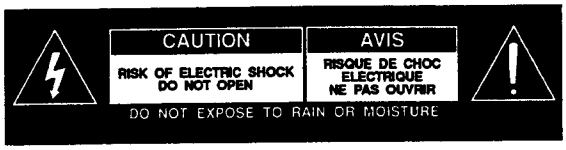
Model Number:	**Manual References**	**Description:**
9105A/U45	9105A	OPTIMOD-HF, 115V 4.5kHz
9105A/J45	9105A + MVM-021	OPTIMOD-HF, 100V 4.5kHz
9105A/E45	9105A + OPT-021	OPTIMOD-HF, 230V 4.5kHz

OPTIONS AVAILABLE

Model Number	**Manual References**	**Purpose**
SC4	ACC-014	Clear Security Cover

MANUAL:

Part Number:	**Description**
95073-000-03C	9105A Manual



CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure — voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual.

IMPORTANT SAFETY INSTRUCTIONS

All the safety and operating instructions should be read before the appliance is operated.

Retain Instructions: The safety and operation instructions should be retained for future reference.

Heed Warnings: All warnings on the appliance and in the operating instructions should be adhered to.

Follow Instructions: All operation and user instructions should be followed.

Water and Moisture: The appliance should not be used near water (e.g., near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.).

Ventilation: The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

Heat: The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

Power Sources: The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

Grounding or Polarization: Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

Power-Cord Protection: Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

Cleaning: The appliance should be cleaned only as recommended by the manufacturer.

Non-use Periods: The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

Object and Liquid Entry: Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

Damage Requiring Service: The appliance should be serviced by qualified service personnel when:
The power supply cord or the plug has been damaged; or
Objects have fallen, or liquid has been spilled into the appliance; or
The appliance has been exposed to rain; or
The appliance does not appear to operate normally or exhibits a marked change in performance; or
The appliance has been dropped, or the enclosure damaged.

Servicing: The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

The Appliance should be used only with a cart or stand that is recommended by the manufacturer.

Safety Instructions (European)

Notice For U.K. Customers If Your Unit Is Equipped With A Power Cord.

WARNING: THIS APPLIANCE MUST BE EARTHED.

The cores in the mains lead are coloured in accordance with the following code:
GREEN and YELLOW - Earth BLUE - Neutral BROWN - Live
As colours of the cores in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The core which is coloured green and yellow must be connected to the terminal in the plug marked with the letter E, or with the earth symbol, (⏚), or coloured green, or green and yellow.
The core which is coloured blue must be connected to the terminal marked N or coloured black.
The core which is coloured brown must be connected to the terminal marked L or coloured red.

The power cord is terminated in a CEE7/7 plug (Continental Europe). The green/yellow wire is connected directly to the unit's chassis. If you need to change the plug and if you are qualified to do so, refer to the table below.

WARNING: If the ground is defeated, certain fault conditions in the unit or in the system to which it is connected can result in full line voltage between chassis and earth ground. Severe injury or death can then result if the chassis and earth ground are touched simultaneously.

CONDUCTOR		WIRE COLOR	
		Normal	Alt
L	LIVE	BROWN	BLACK
N	NEUTRAL	BLUE	WHITE
E	EARTH GND	GREEN-YELLOW	GREEN

AC Power Cord Color Coding

Safety Instructions (German)

Gerät nur an der am Leistungsschild vermerkten Spannung und Stromart betreiben.

Sicherungen nur durch solche, gleicher Stromstärke und gleichen Abschaltverhaltens ersetzen. Sicherungen nie überbrücken.

Jedwede Beschädigung des Netzkabels vermeiden. Netzkabel nicht knicken oder quetschen. Beim Abziehen des Netzkabels den Stecker und nicht das Kabel enfassen. Beschädigte Netzkabel sofort auswechseln.

Gerät und Netzkabel keinen übertriebenen mechanischen Beaspruchungen aussetzen.

Um Berührung gefährlicher elektrischer Spannungen zu vermeiden, darf das Gerät nicht geöffnet werden. Im Fall von Betriebsstörungen darf das Gerät nur Von befugten Servicestellen instandgesetzt werden. Im Gerät befinden sich keine, durch den Benutzer reparierbare Teile.

Zur Vermeidung von elektrischen Schlägen und Feuer ist das Gerät vor Nässe zu schützen. Eindringen von Feuchtigkeit und Flüssigkeiten in das Gerät vermeiden.

Bei Betriebsstörungen bzw. nach Eindringen von Flüssigkeiten oder anderen Gegenständen, das Gerät sofort vom Netz trennen und eine qualifizierte Servicestelle kontaktieren.

Safety Instructions (French)

On s'assurera toujours que la tension et la nature du courant utilisé correspondent bien à ceux indiqués sur la plaque de l'appareil.

N'utiliser que des fusibles de même intensité et du même principe de mise hors circuit que les fusibles d'origine. Ne jamais shunter les fusibles.

Eviter tout ce qui risque d'endommager le câble seceur. On ne devra ni le plier, ni l'aplatir. Lorsqu'on débranche l'appareil, tirer la fiche et non le câble. Si un câble est endommagé, le remplacer immédiatement.

Ne jamais exposer l'appareil ou le câble ä une contrainte mécanique excessive.

Pour éviter tout contact averc une tension électrique dangereuse, on n'oouvrira jamais l'appareil. En cas de dysfonctionnement, l'appareil ne peut être réparé que dans un atelier autorisé. Aucun élément de cet appareil ne peut être réparé par l'utilisateur.

Pour éviter les risques de décharge électrique et d'incendie, protéger l'appareil de l'humidité. Eviter toute pénétration d'humidité ou fr liquide dans l'appareil.

En cas de dysfonctionnement ou si un liquide ou tout autre objet a pénétré dans l'appareil couper aussitôt l'appareil de son alimentation et s'adresser à un point de service aprésvente autorisé.

Safety Instructions (Spanish)

Hacer funcionar el aparato sòlo con la tensiòn y clase de corriente señaladas en la placa indicadora de caracteristicas.

Reemplazar los fusibles sòlo por otros de la misma intensidad de corriente y sistema de desconexiòn. No poner nunca los fusibles en puente.

Proteger el cable de alimentaciòn contra toda clase de daños. No doblar o apretar el cable. Al desenchufar, asir el enchufe y no el cable. Sustituir inmediatamente cables dañados.

No sometar el aparato y el cable de alimentaciòn a esfuerzo mecànico excesivo.

Para evitar el contacto con tensiones eléctricas peligrosas, el aparato no debe abrirse. En caso de producirse fallos de funcionamiento, debe ser reparado sòlo por talleres de servicio autorizados. En el aparato no se encuentra ninguna pieza que pudiera ser reparada por el usuario.

Para evitar descargas eléctricas e incendios, el aparato debe protégerse contra la humedad, impidiendo que penetren ésta o liquidos en el mismo.

En caso de producirse fallos de funcionamiento como consecuencia de la penetraciòn de liquidos u otros objetos en el aparato, hay que desconectarlo inmediatamente de la red y ponerse en contacto con un taller de servicio autorizado.

Safety Instructions (Italian)

Far funzionare l'apparecchio solo con la tensione e il tipo di corrente indicati sulla targa riportante i dati sulle prestazioni.

Sostituire i dispositivi di protezione (valvole, fusibili ecc.) solo con dispositivi aventi lo stesso amperaggio e lo stesso comportamento di interruzione. Non cavallottare mai i dispositivi di protezione.

Evitare qualsiasi danno al cavo di collegamento alla rete. Non piegare o schiacciare il cavo. Per staccare il cavo, tirare la presa e mai il cavo. Sostituire subito i cavi danneggiati.

Non esporre l'apparecchio e il cavo ad esagerate sollecitazioni meccaniche.

Per evitare il contatto con le tensioni elettriche pericolose, l'apparecchio non deve venir aperto. In caso di anomalie di funzionamento l'apparecchio deve venir riparato solo da centri di servizio autorizzati. Nell'apparecchio non si trovano parti che possano essere riparate dall'utente.

Per evitare scosse elettriche o incendi, l'apparecchio va protetto dall'umidità. Evitare che umidità o liquidi entrino nell'apparecchio.

In caso di anomalie di funzionamento rispettivamente dopo la penetrazione di liquidi o oggetti nell'apparecchio, staccare immediatamente l'apparecchio dalla rete e contattare un centro di servizio qualificato.

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PLEASE READ THIS FIRST!

Manual

The Operating Manual contains instructions to verify the proper operation of this unit and initialization of certain options. You will find these operations are most conveniently performed on the bench before you install the unit in the rack.

Please review the Manual, especially the installation section, before unpacking the unit.

Trial Period Precautions

If your unit has been provided on a trial basis:

You should observe the following precautions to avoid reconditioning charges in case you later wish to return the unit to your dealer.

1) Note the packing technique and save all packing materials. It is not wise to ship in other than the factory carton. (Replacements cost $35.00).
2) Avoid scratching the paint or plating. Set the unit on soft, clean surfaces.
3) Do not cut the grounding pin from the line cord.
4) Use care and proper tools in removing and tightening screws to avoid burring the heads.
5) Use the nylon-washered rack screws supplied, if possible, to avoid damaging the panel. Support the unit when tightening the screws so that the threads do not scrape the paint inside the slotted holes.

Packing

When you pack the unit for shipping:

Tighten all screws on any barrier strip(s) so the screws do not fall out from vibration. Wrap the unit in its original plastic bag to avoid abrading the paint. Seal the inner and outer cartons with tape.

If you are returning the unit permanently (for credit), be sure to enclose:

- ☐ The Manual(s)
- ☐ The Registration/Warranty Card
- ☐ The Line Cord
- ☐ All Miscellaneous Hardware (including the Rack Screws and Keys)
- ☐ The Extender Card
- ☐ The Monitor Rolloff Filter(s) (OPTIMOD-AM only)
- ☐ The COAX Connecting Cable (OPTIMOD-FM and OPTIMOD-TV only)

Your dealer may charge you for any missing items.

If you are returning a unit for repair, do not enclose any of the above items.

Further advice on proper packing and shipping is included in the Manual (see Table of Contents).

Trouble

If you have problems with installation or operation:

1) Check everything you have done so far against the instructions in the Manual. The information contained therein is based on our years of experience with Optimod and broadcast stations.
2) Check the other sections of the Manual (consult the Table of Contents and Index) to see if there might be some suggestions regarding your problem.
3) After reading the section on Factory Assistance, you may call Orban Customer Service for advice during normal California business hours. The number is in the Manual.

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9105A
Manual Update
LED Meter Display Upgrade

Note: We have redesigned the 9105A meter display, upgrading the analog meters to LED bar-graph meters. To do this upgrade, we have replaced the meter resistor board documented in the manual. Otherwise, all information provided in the 9105A manual is valid for your 9105A unit.

This document provides a Circuit Description, Parts List, Schematic and Assembly Drawing for the new 9105A meter display board.

Circuit Description of 9105A Bargraph

LED Bargraph GAIN REDUCTION Meters

The GAIN REDUCTION meters each consist of ten comparators with open collector outputs. The ten LEDs in the bargraph are connected in series, and a current source forces a constant current into the LED string. As the magnitude of the input voltage to the comparators decreases, they progressively shunt to the −15V rail the current that would ordinarily flow through the LEDs, turning off all LEDs closer to the −15V rail. The comparators are biased with equal voltage increments, producing a meter whose scale is linear. Because the gain control voltage is linear in dB, this produces a dB-linear meter scale.

A 250Hz "dither" signal is injected into the reference voltage string, modulating the turn-on threshold of each comparator and causing the LEDs to appear to smoothly fade on and off instead of switching abruptly.

Component-Level Description:

All six meters are identical. We will describe Meter 1 (the broadband compressor).

Current source Q2, R7, R26, R27, CR8 applies a constant current to the series-connected diodes in LED assembly CR1. A string of ten comparators IC16-A, IC16-B, IC1, IC10 receives the dB-linear gain reduction voltage. A voltage divider string biases the comparators with DC reference voltages from +0.0746 to +0.746VDC in 0.0746V steps. Each 0.0746V step corresponds to 2.5dB additional gain reduction. When the gain reduction is less than 2.5dB, the gain reduction voltage is less than 0.0746V and the outputs of all comparators are active negative, shunting current from the series-connected LED string. As the gain reduction increases, the output of each comparator in turn becomes open collector and current is permitted to flow in the LED string until it encounters a comparator whose output is still active negative, at which point the active comparator shunts the current away from the rest of the LEDs.

A 250Hz triangle-wave "dither" signal is injected into the reference voltage string through R25. This AC signal modulates the turn-on threshold of each comparator, causing the LEDs to appear to smoothly fade on and off instead of switching abruptly.

IC18 is the 250Hz dither oscillator. IC18-A is an integrator charged from the output of IC18-B, which acts as a comparator. Positive feedback from the output of IC18-A through R39 causes the output of IC18-B to abruptly change state each time the output of IC18-A reaches approximately ±0.046V. The output of IC18-B is thus a square wave, and IC18-A integrates this square wave to form the desired triangle wave.

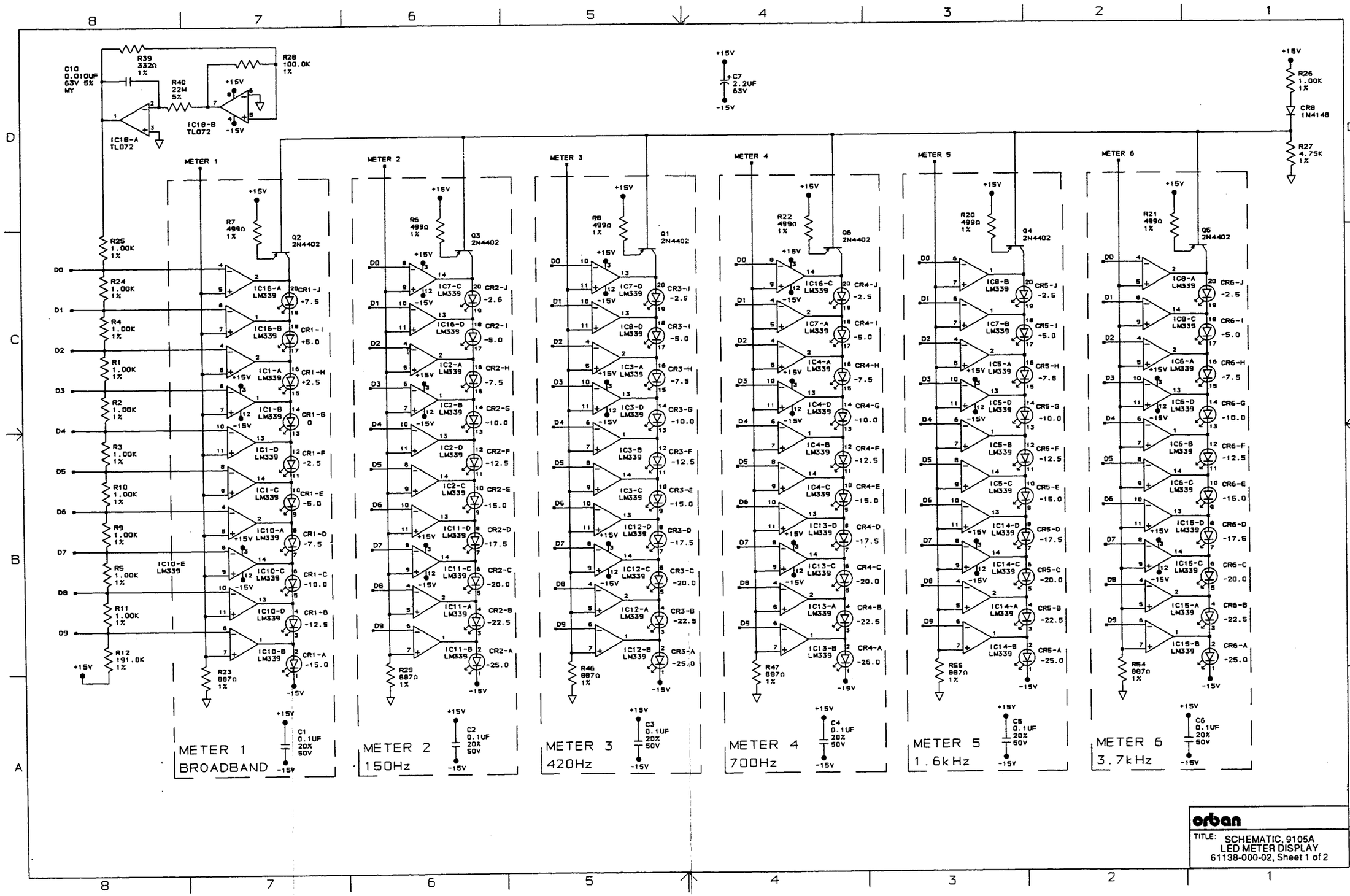
LED METER DISPLAY BOARD

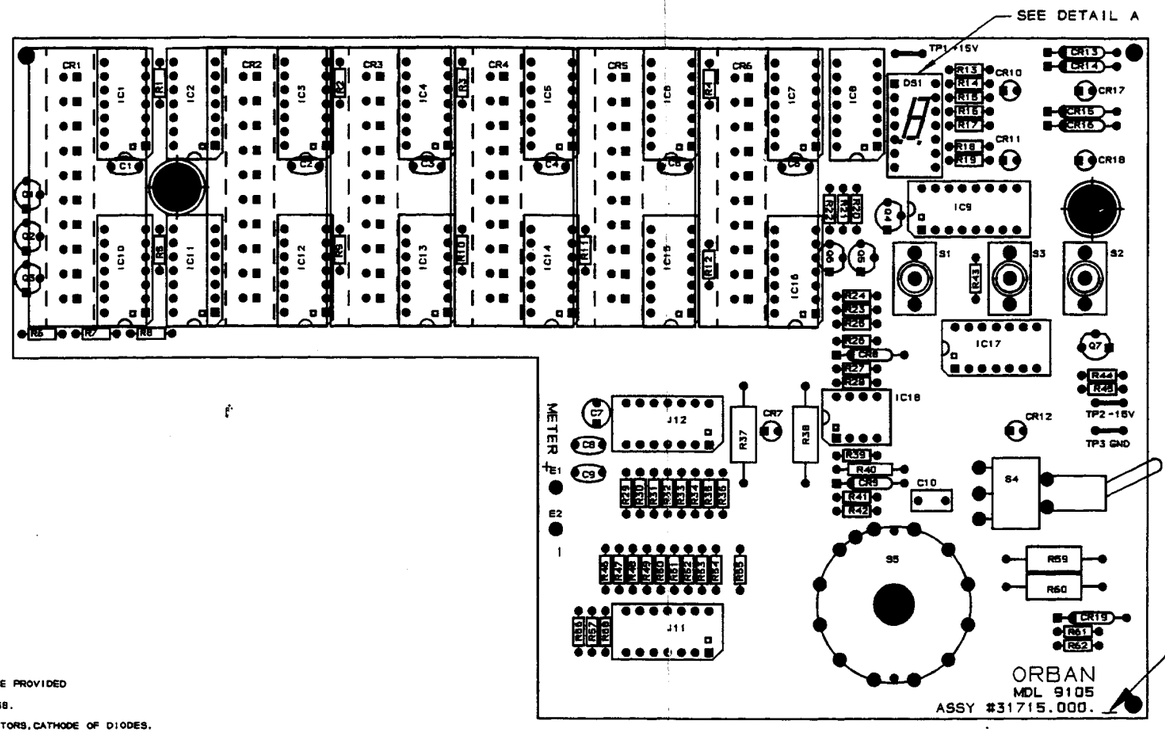
REF DES	DESCRIPTION	ORBAN P/N	VEN (1)	VENDOR P/N	ALTERNATE VENDORS (1)	NOTES
Capacitors						
C1-6	Monolythic Ceramic, 50V, 20%; 0.1uF	21123-410	SPR	1C25 Z5U104M050B	KEM	
C7	Alum., Radial, 63V, -20% +100%; 2.2uF	21209-522	SPR	502D 225G063BB1C	PAN	
C8,9	Monolythic Ceramic, 50V, 20%; 0.1uF	21123-410	SPR	1C25 Z5U104M050B	KEM	
C10	Met. Polyester, 63V, 5%; .01uF	21442-310	WIM	MKS2635.01		
Diodes						
CR1	LED Array, +7.5 TO -15.0	25160-002	ORB			
CR2-6	LED Array, -2.5 TO -25.0	25160-001	ORB			
CR7	LED, Yellow	25106-001	HP	HLMP-1400	GI	
CR10	LED, Green	25106-002	HP	HLMP-1503	GI	
CR11	LED, Yellow	25106-001	HP	HLMP-1400	GI	
CR12	LED, Green	25106-002	HP	HLMP-1503	GI	
CR17,18	LED, Green	25106-002	HP	HLMP-1503	GI	
DS1	LED Display, 0-9, Red	25402-000	HP	5082-7613	GI	
Integrated Circuits						
IC1-8	Quad Comparator	24710-302	NAT	LM339		
IC9	Digital, Driver	24563-302	NAT	CD4511BC	RCA	
IC10-16	Quad Comparator	24710-302	NAT	LM339		
IC17	Digital, Dual Flip-Flop	24502-302	RCA	CD4013BE		
IC18	Linear, Dual Opamp	24206-202	TI	TL072CP	MOT	
Miscellaneous						
J11	Cable Assy, Flat, 14 Pin, 15 inches	40010-003	ORB			
J12	Cable Assy, Flat, 14 Pin, 17.5 inches	40010-002	ORB			
Transistors						
Q1-6	Transistor, Signal, PNP	23002-101	MOT	2N4402	FSC	
Q7	Transistor, Signal, NPN	23202-101	MOT	2N4400	FSC	
Switches						
S1	Switch, Toggle, Min.; SPDT	26046-103	CK	7109P3YW3QE		
S2,3	Switch, Toggle, Min.; SPDT	26044-104	CK	7105P3YW3QE		
S4	Switch, Toggle, Min.; SPDT	26041-102	CK	7101SYABE		
S5	Switch, Rotary, 1P12T	26078-306	CTS	212-Series		

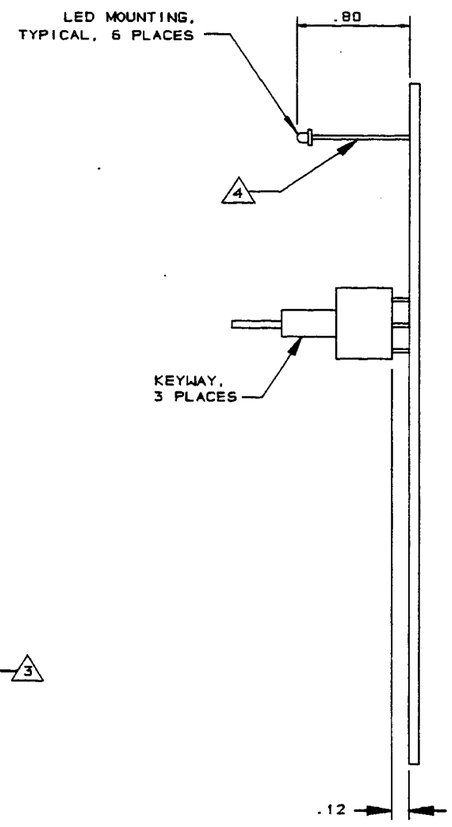
FOOTNOTES:
(1) See page 6-44 of the Manual for Vendor abbreviations
(2) No Alternate Vendors known at publication
(3) Actual part is specially selected from part listed, consult Factory
(4) Realignment may be required if replaced, see Circuit Description and/or Alignment Instructions

SPECIFICATIONS AND SOURCES FOR REPLACEMENT PARTS

Orban Model 9105A
LED Meter Display Board - Capacitors, Diodes, Integrated Circuits, Miscellaneous, Transistors, Switches.


C10
0.010UF
63V 5%
MY
R39
332Ω
1%
R40
22M
5%
R28
100.0K
1%
IC18-A
TL072
IC18-B
TL072
+15V
-15V
C7
2.2UF
63V
R26
1.00K
1%
CR8
1N4148
R27
4.75K
1%
METER 1
METER 2
METER 3
METER 4
METER 5
METER 6
R7
499Ω
1%
R6
499Ω
1%
R8
499Ω
1%
R22
499Ω
1%
R20
499Ω
1%
R21
499Ω
1%
Q2
2N4402
Q3
2N4402
Q1
2N4402
Q6
2N4402
Q4
2N4402
Q5
2N4402
R25
1.00K
1%
R24
1.00K
1%
R4
1.00K
1%
R1
1.00K
1%
R2
1.00K
1%
R3
1.00K
1%
R10
1.00K
1%
R9
1.00K
1%
R5
1.00K
1%
R11
1.00K
1%
R12
191.0K
1%
R23
887Ω
1%
R29
887Ω
1%
R46
887Ω
1%
R47
887Ω
1%
R55
887Ω
1%
R54
887Ω
1%
IC10-E
LM339
D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
IC16-A LM339 CR1-J +7.5
IC16-B LM339 CR1-I +6.0
IC1-A LM339 CR1-H +2.5
IC1-B LM339 CR1-G 0
IC1-D LM339 CR1-F -2.5
IC1-C LM339 CR1-E -5.0
IC10-A LM339 CR1-D -7.5
IC10-C LM339 CR1-C -10.0
IC10-D LM339 CR1-B -12.5
IC10-B LM339 CR1-A -15.0
IC7-C LM339 CR2-J -2.5
IC16-D LM339 CR2-I -5.0
IC2-A LM339 CR2-H -7.5
IC2-B LM339 CR2-G -10.0
IC2-D LM339 CR2-F -12.5
IC2-C LM339 CR2-E -15.0
IC11-D LM339 CR2-D -17.5
IC11-C LM339 CR2-C -20.0
IC11-A LM339 CR2-B -22.5
IC11-B LM339 CR2-A -25.0
IC7-D LM339 CR3-J -2.5
IC8-D LM339 CR3-I -5.0
IC3-A LM339 CR3-H -7.5
IC3-D LM339 CR3-G -10.0
IC3-B LM339 CR3-F -12.5
IC3-C LM339 CR3-E -15.0
IC12-D LM339 CR3-D -17.5
IC12-C LM339 CR3-C -20.0
IC12-A LM339 CR3-B -22.5
IC12-B LM339 CR3-A -25.0
IC16-C LM339 CR4-J -2.5
IC7-A LM339 CR4-I -5.0
IC4-A LM339 CR4-H -7.5
IC4-D LM339 CR4-G -10.0
IC4-B LM339 CR4-F -12.5
IC4-C LM339 CR4-E -15.0
IC13-D LM339 CR4-D -17.5
IC13-C LM339 CR4-C -20.0
IC13-A LM339 CR4-B -22.5
IC13-B LM339 CR4-A -25.0
IC8-B LM339 CR5-J -2.5
IC7-B LM339 CR5-I -5.0
IC5-A LM339 CR5-H -7.5
IC5-D LM339 CR5-G -10.0
IC5-B LM339 CR5-F -12.5
IC5-C LM339 CR5-E -15.0
IC14-D LM339 CR5-D -17.5
IC14-C LM339 CR5-C -20.0
IC14-A LM339 CR5-B -22.5
IC14-B LM339 CR5-A -25.0
IC8-A LM339 CR6-J -2.5
IC8-C LM339 CR6-I -5.0
IC6-A LM339 CR6-H -7.5
IC6-D LM339 CR6-G -10.0
IC6-B LM339 CR6-F -12.5
IC6-C LM339 CR6-E -15.0
IC15-D LM339 CR6-D -17.5
IC15-C LM339 CR6-C -20.0
IC15-A LM339 CR6-B -22.5
IC15-B LM339 CR6-A -25.0
C1
0.1UF
20%
50V
C2
0.1UF
20%
50V
C3
0.1UF
20%
50V
C4
0.1UF
20%
50V
C5
0.1UF
20%
50V
C6
0.1UF
20%
50V
METER 1
BROADBAND
METER 2
150Hz
METER 3
420Hz
METER 4
700Hz
METER 5
1.6kHz
METER 6
3.7kHz
orban
TITLE: SCHEMATIC, 9105A
LED METER DISPLAY
61138-000-02, Sheet 1 of 2





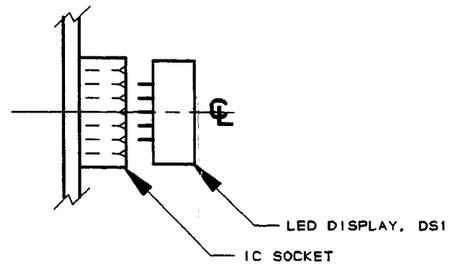
4. ADD TEFLON TUBING TO ALL LED LEADS.

3. MARK ASSEMBLY REVISION LEVEL IN SPACE PROVIDED

2. REFERENCE SCHEMATIC DRAWING NO. 61138.

1. SQUARE PADS INDICATE PIN 1 OF CONNECTORS, CATHODE OF DIODES, POS. SIDE OF CAPS., PIN 1 OF ICS

NOTES: (UNLESS OTHERWISE SPECIFIED)



DETAIL A

DS1 MOUNTING INTO 14-PIN IC SOCKET
(NO SCALE)

COMPONENT SIDE

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TITLE: PCB ASSY, 9105A
LED METER DISPLAY
31715-000-01

BACKPLANE

METER RESISTOR PCB

FRONT PANEL

CARD #4 (19) J12 7 — R31 9.53K 1%
CARD #2 (19) J12 5 — R33 2.80K 1%
CARD #4 (V) J12 3 — R34 1.00K 1%
CARD #7 (21) J12 1 — R35 7.32K 1%
CARD #7 (X) J12 8 — R30 20.5K 1%
CARD #8 (22) J12 6 — R32 20.5K 1%
CARD #8 (V) J12 2 — R36 33.2K 1%
+15V, POWER SUPPLY BOARD E6 (E21) J12 9 — TP1 +15V — R42 100.0K 1%
-15V, POWER SUPPLY BOARD E8 (E24) J12 14 — TP2 -15V — R41 100.0K 1%
C8 0.1UF 20% 50V
C9 0.1UF 20% 50V
GROUND, POWER SUPPLY (E22) J12 13 — TP3 GND

S5 (ROTARY) "METER FUNCTION"

"INPUT FILTER"	1
"AGC"	2
"RECEIVER EQ"	3
"MULTI BAND LIM"	4
"H-T CLIPPER"	5
"TX EQ"	6
"TX OUTPUT"	7
N/C	8
N/C	9
N/C	10
"+15 VDC"	11
"-15 VDC"	12
	13

E1 + M7 VU METER − E2

CARD #6 (20) J11 11 — R48 11.0K 1% — METER 1
CARD #6 (13) J11 9 — R49 6.19K 1% — METER 2
CARD #6 (14) J11 7 — R50 6.19K 1% — METER 3
CARD #6 (15) J11 5 — R51 6.19K 1% — METER 4
CARD #6 (16) J11 3 — R52 6.19K 1% — METER 5
CARD #6 (17) J11 1 — R53 6.19K 1% — METER 6

CR13 1N4148, CR14 1N4148, CR17 GRN "1"
CARD #8 (J) J11 10 — CR18 GRN "2" — R60 1.0K .5W, 5%
CR16 1N4148, CR15 1N4148, CR10 GRN
CARD #8 (H) J11 13 — "BYPASS" "NORMAL" — R59 1.0K .5W, 5%
CARD #6 (X) J12 4 — R38 1.0K .5W 5% — CR9 1N4148 — CR11 YEL — CR7 YEL "GATE"
R37 1.5K .5W 5%
-22 V, POWER SUPPLY (E19) J12 10 — "POWER" CR12 GRN

IC17-B CD4013 (D, C, S, R, Q, V; -15V)

CARD #8 (9) J11 8
CARD #8 (8) J11 6
CARD #8 (7) J11 4
CARD #8 (6) J11 2

S2 "PROCESSOR" PRESET 1 / PRESET 2
S3 "PROCESSOR" NORMAL / BYPASS
S1 TX EQ PRESET

CARD #8 (K) J12 12 — IC17-A CD4013 (N/C, D, S, R, Q, V; -15V)
R45 100.0K 1% -15V
R44 100.0K 1% -15V
NORMAL 1 / TX EQ PRESET 3

CARD #8 (X) J11 12
CARD #8 (W) J12 11
CARD #8 (Y) J11 14

R56 100.0K 1% -15V
R57 100.0K 1% -15V
R58 100.0K 1% -15V

IC9 CD4511B (A, B, C, D, LT, BI, LE, Vss, Vdd; -15V)

R14 2.2K 5%
R13 2.2K 5%
R18 2.2K 5%
R19 2.2K 5%
R17 2.2K 5%
R16 2.2K 5%
R15 2.2K 5%

DS1 HP 5082-7613 (DP, G, F, E, D, C, B, A, COM, COM; -15V)

CR19 1N4148
Q7 2N4400 -15V
NORMAL
R61 100.0K 1%
R62 10K 5% -15V
R43 100.0K 1%
S4 PANEL LOCKOUT — LOCKOUT

orban

TITLE: SCHEMATIC, 9105A
LED METER DISPLAY
61138-000-02, Sheet 2 of 2

Operating Manual

OPTIMOD-HF

Audio Processor

Model 9105A

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